

IN THE CLAIMS

The pending claims are provided below for reference (no claims are amended herein):

Listing of Claims

Claims 1-44 (Cancelled).

45. (Previously Presented) A method for balancing the distribution of interference between radio cells in a wireless communication system, the wireless communication system comprising a plurality of radio cells in which a plurality of subcarrier blocks are used for communication, wherein a number of adjacent radio cells build a cell cluster, wherein the radio cells of the cell cluster each comprise corresponding subcarrier block sets having the same subcarrier blocks, and wherein each subcarrier block comprises a plurality of subcarriers, the method comprising:

grouping said subcarrier blocks into a plurality of subcarrier block sets in each radio cell of the cell cluster,

determining a plurality of transmission power ranges for each of the radio cells of said cell cluster, wherein a respective transmission power range defines a range of transmission power levels used for transmission power control within a respective radio cell of the cell cluster,

assigning the plurality of transmission power ranges to the subcarrier block sets of radio cells of the cell cluster, such that:

in each radio cell of the cell cluster, each of said plurality of transmission power ranges is mapped to one of the subcarrier block sets of a respective radio cell, and

each of said plurality of transmission power ranges is mapped to one of said corresponding subcarrier block sets among the radio cells of said cell cluster.

Claims 46-48 (Cancelled).

49. (Previously Presented) The method according to claim 45, wherein the mapping is a unique or one-to-one mapping.

50. (Previously Presented) A method for balancing the distribution of interference between radio cells in a wireless communication system, the wireless communication system comprising a plurality of radio cells in which a plurality of subcarrier blocks are used for communication, wherein N adjacent radio cells build a cell cluster, wherein the N radio cells of the cell cluster each comprise corresponding subcarrier block sets having the same subcarrier blocks, and wherein each subcarrier block comprises a plurality of subcarriers, N being an integer number of 2 or more, the method comprising:

grouping said subcarrier blocks into N subcarrier block sets in each radio cell of the cell cluster,

determining N transmission power ranges for each of the radio cells of said cell cluster, wherein a respective transmission power range defines a range of transmission power levels used for transmission power control within a respective radio cell of the cell cluster,

assigning N transmission power ranges to the N subcarrier block sets of radio cells of the cell cluster, such that

in each of the N radio cells of the cell cluster, each of said N transmission power ranges is mapped to one of the N subcarrier block sets of a respective radio cell, and

each of said N transmission power ranges is mapped to one of said corresponding subcarrier block sets among the N radio cells of said cell cluster.

51. (Previously Presented) A method for balancing the distribution of interference between radio cells in a wireless communication system, the wireless communication system comprising a plurality of radio cells each of them comprising at least two sectors in each of which a plurality of subcarrier blocks are used for communication, wherein a sector of a radio cell and its adjacent sectors in neighboring radio cells build a sector cluster, wherein the sector cluster comprises corresponding subcarrier block sets having the same subcarrier blocks, and wherein each subcarrier block comprises a plurality of subcarriers, the method comprising:

grouping said subcarrier blocks into a plurality of subcarrier block sets in each of the sectors of the sector cluster,

determining a plurality of transmission power ranges for each sector of the sector cluster, wherein a respective transmission power range defines a range of transmission power levels used for transmission power control within a respective sector of the sector cluster,

assigning the plurality of transmission power ranges to the plurality of subcarrier block sets of a sector of a radio cell and its adjacent sectors of said other radio cells, wherein said plurality of transmission power ranges is assigned to the subcarrier block sets of the sector cluster, such that

in each sector of a sector cluster, each of said plurality of transmission power ranges is mapped to one of said subcarrier block sets of a respective sector, and

each of said plurality of transmission power ranges is mapped to one of said corresponding subcarrier block sets in the sector cluster.

Claims 52-54 (Cancelled).

55. (Previously Presented) The method according to claim 51, wherein the mapping is a unique or one-to-one mapping.

56. (Previously Presented) The method according to claim 45, wherein the communication system comprises a plurality of communication terminals communicating with base stations associated with said plurality of adjacent radio cells of the cell cluster, the method further comprising:

measuring the path loss of a communication signal of a communication terminal and the path loss of interference from adjacent radio cells of the cell cluster for said communication signal, and

assigning the communication terminal to a subcarrier block of a subcarrier block set in a radio cell of the cell cluster other than the adjacent radio cells based on said measurement.

57. (Previously Presented) The method according to claim 56, further comprising determining a transmission power range for said communication terminal based on said measurement, and wherein the communication terminal is assigned to a block set based on the determined transmission power range.

58. (Previously Presented) The method according to claim 45, wherein the transmission power ranges in different radio cells of the cell cluster vary.

59. (Previously Presented) The method according to claim 45, wherein the subcarrier block set size of corresponding subcarrier block sets is equal.

60. (Previously Presented) The method according to claim 45, further comprising reconfiguring the subcarrier block sets in a radio cell of the cell cluster.

61. (Previously Presented) The method according to claim 45, further comprising reconfiguring the transmission power ranges in a radio cell of the cell cluster.

62. (Previously Presented) The method according to claim 61, wherein the reconfiguration of the subcarrier block sets in the radio cell of the cell cluster is performed in accordance with the other adjacent radio cells of the cell cluster.

63. (Previously Presented) The method according to claim 60, wherein the reconfiguration of the power ranges and/or the subcarrier block sets in the sector is performed in accordance with the other sectors of its sector cluster.

64. (Previously Presented) The method according to claim 60, wherein the reconfiguration is based on channel quality measurements.

65. (Previously Presented) The method according to claim 45, further comprising signaling information related to a reconfiguration of the subcarrier block sets in a radio cell from the radio cell to at least one adjacent radio cell within the cell cluster.

66. (Previously Presented) The method according to claim 61, further comprising signaling information related to channel qualities in a radio cell of the cell cluster from said radio cell to at least one other adjacent radio cell within the cell cluster.

67. (Previously Presented) The method according to claim 65, further comprising signaling the information to a control unit in the communication system.

68. (Previously Presented) The method according to claim 56, further comprising signaling information related to a subcarrier block assignment and/or a subcarrier block set assignment to a communication terminal.

69. (Previously Presented) A base station for use in a wireless communication system, the wireless communication system comprising a plurality of radio cells in which a plurality of subcarrier blocks are used for communication, wherein a number of adjacent radio cells build a cell cluster, wherein the radio cells of the cell cluster each comprise corresponding subcarrier block sets having the same subcarrier blocks, and wherein each subcarrier block comprises a plurality of subcarriers, the base station controlling one of the radio cells of the cell cluster and comprising:

a processing unit operable to group said subcarrier blocks into a plurality of subcarrier block sets in the radio cell of the cell cluster controlled by the base station,

a determination unit operable to determine a plurality of transmission power ranges for the radio cell of the cell cluster controlled by the base station,

a power control unit operable to perform power control within a range of transmission power levels defined by a respective one of said plurality of transmission power ranges,

an assigning unit operable to assign the plurality transmission power ranges to the subcarrier block sets of the radio cells of the cell cluster controlled by the base station, such that

in each radio cell of the cell cluster, each of said plurality of transmission power ranges is mapped to one of the subcarrier block sets of a respective radio cell, and

each of said plurality of transmission power ranges is mapped to one of said corresponding subcarrier block sets among the radio cells of said cell cluster.

Claims 70-72 (Cancelled).

73. (Previously Presented) A base station in a wireless communication system, the wireless communication system comprising a plurality of radio cells in which a plurality of subcarrier blocks are used for communication, wherein N adjacent radio cells build a cell cluster, wherein the N radio cells of the cell cluster each comprise corresponding subcarrier block sets having the same subcarrier blocks, and wherein each subcarrier block comprises a plurality of subcarriers, N being an integer number of 2 or more, the base station controlling one of the radio cells of the cluster and comprising:

a processing unit operable to group said subcarrier blocks into N subcarrier block sets in the radio cell controlled by the base station,

a determination unit operable to determine N transmission power ranges for the radio cell of the cell cluster controlled by the base station,

a power control unit operable to perform power control within a range of transmission power levels defined by a respective one of said plurality of transmission power ranges,

an assigning unit operable to assign N transmission power ranges to the N subcarrier block sets of the radio cells of the cell cluster controlled by the base station, such that

in each of the N radio cells of the cell cluster, each of said N transmission power ranges is mapped to one of the N subcarrier block sets of a respective radio cell, and

each of said N transmission power ranges is mapped to one of said corresponding subcarrier block sets among the N radio cells of said cell cluster.

74. (Previously Presented) A base station for use in a wireless communication system, the wireless communication system comprising a plurality of radio cells each of them comprising at least two sectors in each of which a plurality of subcarrier blocks are used for communication, wherein a sector of a radio cell and its adjacent sectors in neighboring radio cells build a sector cluster, wherein the sector cluster comprises corresponding subcarrier block sets having the same subcarrier blocks, and wherein each subcarrier block comprises a plurality of subcarriers, the base station controlling a radio cell having a sector of the sector cluster and comprising:

a processing unit operable to group said subcarrier blocks into a plurality of subcarrier block sets in the sector of the sector cluster controlled by the base station,

a determination unit operable to determine a plurality of transmission power ranges for the sector of the sector cluster controlled by the base station,

a power control unit operable to perform power control within a range of transmission power levels defined by a respective one of said plurality of transmission power ranges,

an assigning unit operable to assign the transmission power ranges to the subcarrier block sets of the sector of the sector cluster controlled by the base station, such that

in each sector of a sector cluster, each of said plurality of transmission power ranges is mapped to one of said subcarrier block sets of a respective sector, and

each of said plurality of transmission power ranges is mapped to one of said corresponding subcarrier block sets in the sector cluster.

Claims 75 and 76 (Cancelled).

77. (Previously Presented) The base station according to claims 73, further comprising:

a measuring unit operable to measure the path loss of a communication signal of a communication terminal and the path loss due to interference among the N adjacent radio cells of the cell cluster for said communication signal, and

the assigning unit is operable to assign the communication terminal to one of said subcarrier block sets based on said measurements.

Claims 78 and 79 (Cancelled).

80. (Previously Presented) A radio communication system comprising a base station according to claim 69 and a communication terminal in a wireless communication system, the wireless communication system comprising a plurality of radio cells in which a plurality of subcarrier blocks are used for communication, wherein each subcarrier block comprises a plurality of subcarriers, the communication terminal comprising a power control unit operable to perform power control between a base station of a radio cell communicating with the communication terminal, wherein the power control unit is operable to perform power control in a transmission power control range in an interval defined by a transmission power level of 0 and a maximum transmission power level.

81. (Previously Presented) The method according to claim 51, wherein the transmission power ranges in different sectors of the sector cluster vary.

82. (Previously Presented) The method according to claim 51, further comprising reconfiguring the subcarrier block sets in a sector of the sector cluster.

83. (Previously Presented) The method according to claim 51, further comprising reconfiguring the transmission power ranges in a sector of the sector cluster.

84. (Previously Presented) The method according to claim 51, wherein the subcarrier block set size of corresponding subcarrier block sets is equal.

85. (Previously Presented) A communication terminal in a wireless communication system, the wireless communication system comprising a plurality of radio cells in which a plurality of subcarrier blocks are used for communication, wherein a number of adjacent radio cells build a cell cluster, wherein the radio cells of the cell cluster each comprises corresponding subcarrier block sets having the same subcarrier blocks, and wherein each subcarrier block comprises a plurality of subcarriers, wherein the communication terminal is communicating in one of the radio cells of the cell cluster and comprising:

a power control unit that performs power control of the data transmitted to a base station controlling the radio cell by the communication terminal, wherein the power control unit performs power control within a given one of plural transmission power control ranges, wherein each transmission power control range is associated to one of the subcarrier block sets in the radio cell,

a receiving unit that receives an allocation of a subcarrier block assignment or a subcarrier block set, and

a selection unit that transmits data to the base station on the assigned subcarrier block or assigned subcarrier block set, wherein

the transmit power control unit performs power control of the transmitted data within the transmit power control range associated to the subcarrier block set to which the assigned subcarrier block belongs, respectively associated to the assigned subcarrier block set.